



SAW Components

Data Sheet B7847





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Low-Loss Filter for Mobile Communication

1960,0 MHz

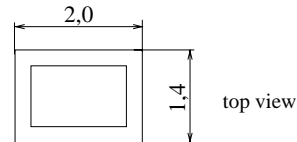
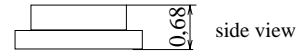
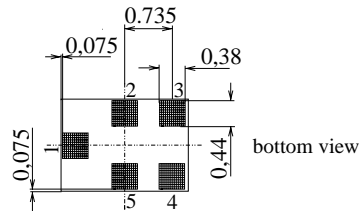
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Chip sized SAW package **QCS5E**

Features

- Low-loss RF filter for mobile telephone PCS systems, receive path
- Usable passband 60 MHz
- Unbalanced to balanced operation
- Impedance transformation from 50Ω to 100Ω
- Low insertion loss and very high Tx blocking
- Package for **Surface Mounted Technology (SMT)**



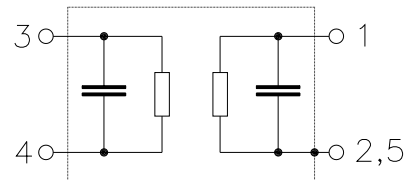
Terminals

- Gold-plated Ni

Dimensions in mm, approx. weight 0,007 g

Pin configuration

- 1 Input, unbalanced
- 3, 4 Output, balanced
- 2, 5 Case ground



Type	Ordering code	Marking and Package according to	Packing according to
B7847	B39202-B7847-K410	C61157-A7-A131	F61074-V8151-Z000

Electrostatic Sensitive Device (ESD)

Maximum ratings

Operable temperature range	T	- 40/+ 85	°C	Machine Model, 10 pulses
Storage temperature range	T_{stg}	- 40/+ 85	°C	
DC voltage	V_{DC}	5	V	
ESD voltage	V_{ESD}	50*	V	
Input power	P_S	10	dBm	

* - acc. to JESD22-A115A (Machine Model), 10 negative & 10 positive pulses



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Characteristics

Operating temperature range: $T = 25\text{ }^{\circ}\text{C}$
 Terminating source impedance: $Z_S = 50\ \Omega$
 Terminating load impedance: $Z_L = 100\ \Omega$ (balanced) || 22 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{\max}	—	2,3	2,7	dB
1930,0 ... 1990,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,9	1,3	dB
1930,0 ... 1990,0 MHz					
Input VSWR		—	2,0	2,4	
1930,0 ... 1990,0 MHz					
Output VSWR		—	2,1	2,5	
1930,0 ... 1990,0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^{\circ}$)		-10	—	10	degree
1930,0 ... 1990,0 MHz					
Output amplitude balance (S_{31}/S_{21})		-1,4	—	1,4	dB
1930,0 ... 1990,0 MHz					
Attenuation	α				
10,0 ... 1600,0 MHz		40	50	—	dB
1600,0 ... 1850,0 MHz		30	35	—	dB
1850,0 ... 1910,0 MHz		24	27	—	dB
2040,0 ... 2200,0 MHz		25	29	—	dB
2200,0 ... 2800,0 MHz		30	39	—	dB
2800,0 ... 6000,0 MHz		40	47	—	dB



Data Sheet



Characteristics

Operating temperature range: $T = -30 \dots 85 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$
 Terminating load impedance: $Z_L = 100 \text{ } \Omega$ (balanced) || 22 nH

		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{\max}	—	2,3	2,9 ¹⁾	dB
1930,6 ... 1989,4 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,9	1,7	dB
1930,6 ... 1989,4 MHz					
Input VSWR		—	2,0	2,4	
1930,6 ... 1989,4 MHz					
Output VSWR		—	2,1	2,5	
1930,6 ... 1989,4 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-10	—	10	degree
1930,6 ... 1989,4 MHz					
Output amplitude balance ($ S_{31}/S_{21} $)		-1,4	—	1,4	dB
1930,6 ... 1989,4 MHz					
Attenuation	α				
10,0 ... 1600,0 MHz		40	50	—	dB
1600,0 ... 1850,6 MHz		30	35	—	dB
1850,6 ... 1909,4 MHz		24 ²⁾	27	—	dB
2040,0 ... 2200,0 MHz		25	29	—	dB
2200,0 ... 2800,0 MHz		30	39	—	dB
2800,0 ... 6000,0 MHz		40	47	—	dB

1) $T = +15^\circ\text{C}$ to $+65^\circ\text{C}$, 3,1 dB for $T = -30^\circ\text{C}$ to $+85^\circ\text{C}$

2) $T = 0^\circ\text{C}$ to $+65^\circ\text{C}$, 20 dB for $T = -30^\circ\text{C}$ to $+85^\circ\text{C}$



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Characteristics

Operating temperature range: $T = -30 \dots 85 \text{ }^\circ\text{C}$
 Terminating source impedance: $Z_S = 50 \text{ } \Omega$
 Terminating load impedance: $Z_L = 100 \text{ } \Omega$ (balanced) || 22 nH

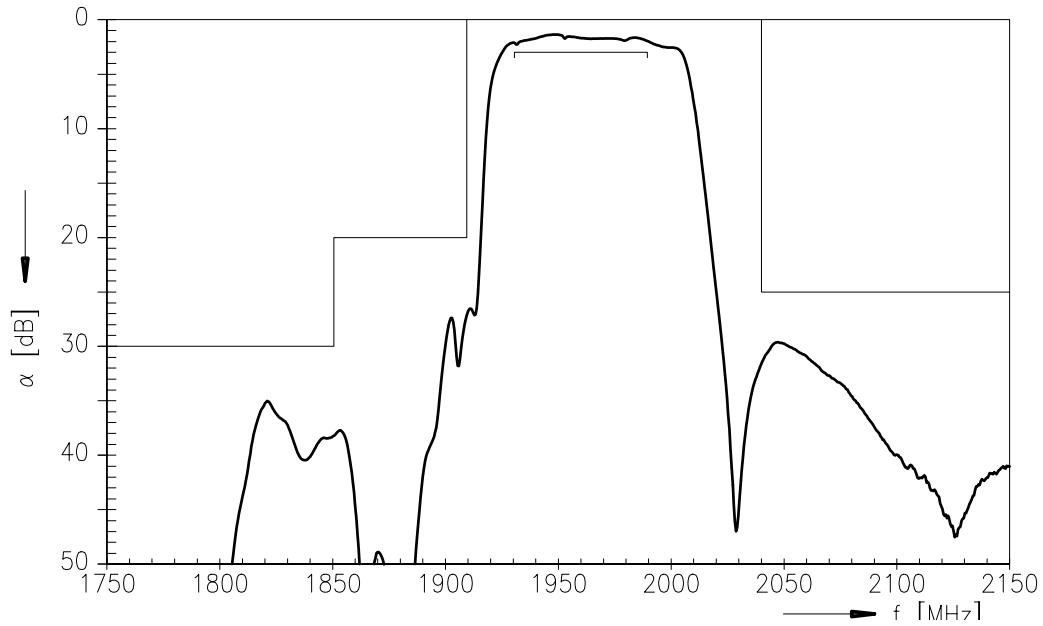
		min.	typ.	max.	
Center frequency	f_C	—	1960,0	—	MHz
Maximum insertion attenuation	α_{max}	—	2,3	2,9 ¹⁾	dB
1930,0 ... 1990,0 MHz					
Amplitude ripple (p-p)	$\Delta\alpha$	—	0,9	1,9	dB
1930,0 ... 1990,0 MHz					
Input VSWR		—	2,0	2,4	
1930,0 ... 1990,0 MHz					
Output VSWR		—	2,1	2,5	
1930,0 ... 1990,0 MHz					
Output phase balance ($\phi(S_{31}) - \phi(S_{21}) + 180^\circ$)		-10	—	10	degree
1930,0 ... 1990,0 MHz					
Output amplitude balance ($ S_{31}/S_{21} $)		-1,4	—	1,4	dB
1930,0 ... 1990,0 MHz					
Attenuation	α				
10,0 ... 1600,0 MHz		40	50	—	dB
1600,0 ... 1850,0 MHz		30	35	—	dB
1850,0 ... 1910,0 MHz		23 ²⁾	27	—	dB
2040,0 ... 2200,0 MHz		25	29	—	dB
2200,0 ... 2800,0 MHz		30	39	—	dB
2800,0 ... 6000,0 MHz		40	47	—	dB

1) $T = +15^\circ\text{C}$ to $+65^\circ\text{C}$, 3,3 dB for $T = -30^\circ\text{C}$ to $+85^\circ\text{C}$

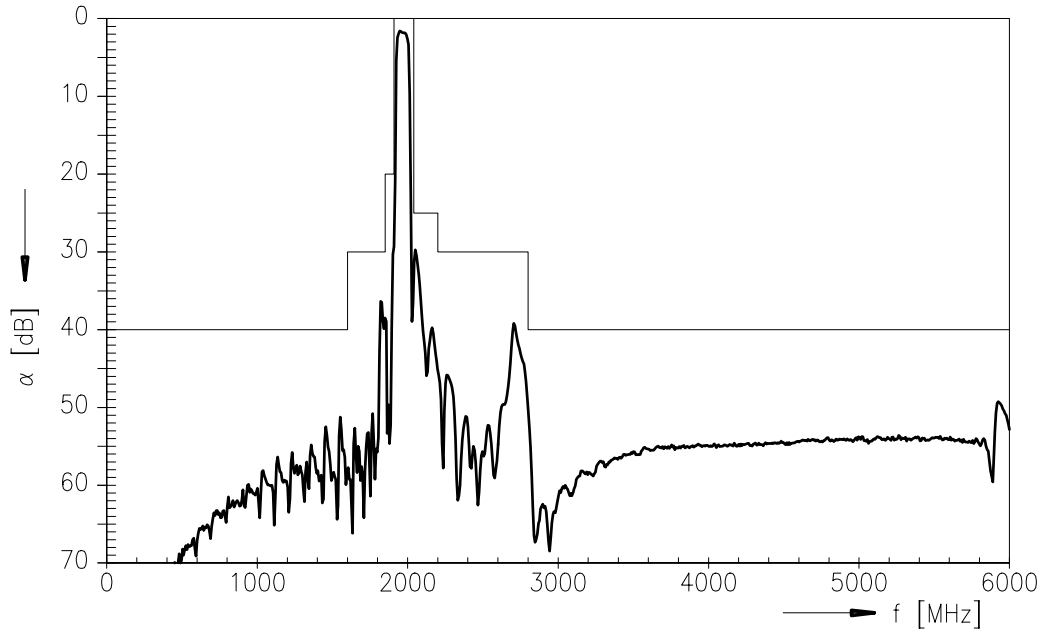
2) $T = 0^\circ\text{C}$ to $+65^\circ\text{C}$, 18 dB for $T = -30^\circ\text{C}$ to $+85^\circ\text{C}$



Transfer function (measured at room temperature):



Transfer function (wideband, measured at room temperature):





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Published by EPCOS AG

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